



Attorney Docket: 50186  
PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: POPE et al.

Serial No.: 09/890,529

Group Art Unit: 1745

Filed: APRIL 5, 2002

Examiner: C. CHANEY

Title: SINGLE COMPONENT SULFUR-BASED CATHODES FOR  
LITHIUM BATTERIES

RESPONSE TO RESTRICTION REQUIREMENT

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

The outstanding Patent Office Action of March 19, 2004 required restriction between the Group I set of Claims 1-4 and 36-42 drawn to a method of making a battery, Group II set of Claims 5-35 drawn to a lithium battery and its cathode.

In accordance with this requirement, Applicant provisionally elects for prosecution the Group II set of Claims 5-35, drawn to a lithium battery and its cathode.

The restriction requirement for Groups I and II asserts that the groups do not relate to a single general inventive concept due to claims being obvious or anticipated in view of Maxfield. Applicants respectfully disagree.

With regard to Group I Maxfield does not show or render obvious identifying a characteristic of a sulfur species, evaluating such and selecting the sulfur species based on the characteristic where the characteristic is one of the listed characteristics. Maxfield shows that stability in the electrolyte, high charge capacity and low cell resistance are advantageous for the substrate polymer but not for any sulfur species (see col. 3, lines 43-44 and 52-53; also note col. 2, lines 15-18). With regard to Group II Maxfield does not show or render obvious a cathode material comprising a sulfur species and a conducting polymer. Maxfield shows a substrate polymer which is a conjugated backbone polymer which then is oxidized to provide a formation of another polymer thereon. The other polymer is a film or coating and is not considered part of the substrate (see col. 3, lines 5-6). Thus, Maxfield shows two different polymer materials in the electrode not a material comprising a sulfur species and a conducting polymer. The restriction requirement asserts that the product of Maxfield would contain sulfur groups covalently bonded to the conjugated polymer. Applicants respectfully disagree. Maxfield shows no such bonding between the substrate and surface polymers. Thus, it is respectfully submitted that no showing of a lack of a corresponding special technical feature has been given and the restriction requirement should be withdrawn.

In response to the species restriction Applicants provisionally elect the species of species 2 upon which Claim 25 is readable. In the event that one or more generic claims are found allowable, however, applicants request inclusion of the remaining claims directed to the provisionally non-elected species.

If there are any questions regarding this response or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

In order to effect a timely response, this paper is accompanied by a petition for an Extension of Time of 3 months sufficient to effect a timely response,

Respectfully submitted,

July 19, 2004



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